SEQUENCE LISTING

<110> Aventis Pasteur Limited
Brunham, Robert
Raudonikiene, Ausra
Gallichan, Scott
Murdin, Andrew

<120> Immunization Against Chlamydia Infectio with 60K CRMP

<130> RY185

<150> US 60/481,676
<151> 2003-11-20

<160> 14

<170> PatentIn version 3.3

<210> 1
<211> 1662
<212> DNA
<213> Chlamydia muridium

<220>
<221> CDS
<222> (1)..(1662)

<400> 1

```
atg cga ata gga gat cct atg aac aaa ctc atc aga cga gct gtg acg       48
Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
1               5                   10                  15

atc ttc gcg gtg act agt gtg gcg agt tta ttt gct agc ggg gtg tta       96
Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
            20                  25                  30

gag acc tct atg gca gag tct ctc tct acc aac gtt att agc tta gct      144
Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala
        35                  40                  45

gac acc aaa gcg aaa gag acc act tct cat caa aaa gac aga aaa gca      192
Asp Thr Lys Ala Lys Glu Thr Thr Ser His Gln Lys Asp Arg Lys Ala
    50                  55                  60

aga aaa aat cat caa aat agg act tcc gta gtc cgt aaa gag gtt act      240
Arg Lys Asn His Gln Asn Arg Thr Ser Val Val Arg Lys Glu Val Thr
65                  70                  75                  80

gca gtt cgt gat act aaa gct gta gag cct aga cag gat tct tgc ttt      288
Ala Val Arg Asp Thr Lys Ala Val Glu Pro Arg Gln Asp Ser Cys Phe
                85                  90                  95

ggc aaa atg tat aca gtc aaa gtt aat gat gat cgt aat gta gaa atc      336
Gly Lys Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile
```

```
          100                 105                 110

gtg cag tcc gtt cct gaa tat gct acg gta gga tct cca tat cct att      384
Val Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile
        115                 120                 125

gag att act gct ata ggg aaa aga gac tgt gtt gat gta atc att aca      432
Glu Ile Thr Ala Ile Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr
    130                 135                 140

cag caa tta cca tgc gaa gca gag ttt gtt agc agt gat cca gct act      480
Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro Ala Thr
145                 150                 155                 160

act cct act gct gat ggt aag cta gtt tgg aaa att gat cgg tta gga      528
Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly
                165                 170                 175

cag ggc gaa aag agt aaa att act gta tgg gta aaa cct ctt aaa gaa      576
Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu
            180                 185                 190

ggt tgc tgc ttt aca gct gca acg gtt tgt gct tgt cca gag atc cgt      624
Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg
        195                 200                 205

tcg gtt acg aaa tgt ggc cag cct gct atc tgt gtt aaa cag gaa ggt      672
Ser Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly
    210                 215                 220

cca gaa agc gca tgt ttg cgt tgc cca gta act tat aga att aat gta      720
Pro Glu Ser Ala Cys Leu Arg Cys Pro Val Thr Tyr Arg Ile Asn Val
225                 230                 235                 240

gtc aac caa gga aca gca aca gca cgt aat gtt gtt gtg gaa aat cct      768
Val Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro
                245                 250                 255

gtt cca gat ggc tat gct cat gca tcc gga cag cgt gta ttg aca tat      816
Val Pro Asp Gly Tyr Ala His Ala Ser Gly Gln Arg Val Leu Thr Tyr
            260                 265                 270

act ctt ggg gat atg caa cct gga gaa cag aga aca atc acc gtg gag      864
Thr Leu Gly Asp Met Gln Pro Gly Glu Gln Arg Thr Ile Thr Val Glu
        275                 280                 285

ttt tgt ccg ctt aaa cgt ggt cga gtc aca aat att gct aca gtt tct      912
Phe Cys Pro Leu Lys Arg Gly Arg Val Thr Asn Ile Ala Thr Val Ser
    290                 295                 300

tac tgt ggt gga cac aaa aat act gct agc gta aca aca gtg atc aat      960
Tyr Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn
305                 310                 315                 320

gag cct tgc gtg caa gtt aac atc gag gga gca gat tgg tct tat gtt     1008
Glu Pro Cys Val Gln Val Asn Ile Glu Gly Ala Asp Trp Ser Tyr Val
                325                 330                 335
```

```
tgt aag cct gta gaa tat gtt atc tct gtt tct aac cct ggt gac tta     1056
Cys Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu
            340                 345                 350

gtt tta cga gac gtt gta att gaa gat acg ctt tct cct gga ata act     1104
Val Leu Arg Asp Val Val Ile Glu Asp Thr Leu Ser Pro Gly Ile Thr
        355                 360                 365

gtt gtt gaa gca gct gga gct cag att tct tgt aat aaa ttg gtt tgg     1152
Val Val Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Leu Val Trp
    370                 375                 380

act ttg aag gaa ctc aat cct gga gag tct tta caa tat aag gtt cta     1200
Thr Leu Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu
385                 390                 395                 400

gta aga gct caa act cca ggg caa ttc aca aac aac gtt gtt gtg aaa     1248
Val Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys
                405                 410                 415

agt tgc tct gat tgc ggt att tgt act tct tgc gca gaa gca aca act     1296
Ser Cys Ser Asp Cys Gly Ile Cys Thr Ser Cys Ala Glu Ala Thr Thr
            420                 425                 430

tac tgg aaa gga gtt gct gct act cat atg tgc gta gta gat act tgt     1344
Tyr Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys
        435                 440                 445

gat cct att tgc gta gga gag aac act gtt tat cgt atc tgt gtg aca     1392
Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr
    450                 455                 460

aac aga ggt tct gct gaa gat aca aat gtg tcc tta att ttg aaa ttc     1440
Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu Lys Phe
465                 470                 475                 480

tct aaa gaa tta caa cct ata tct ttc tct gga cca act aaa gga acc     1488
Ser Lys Glu Leu Gln Pro Ile Ser Phe Ser Gly Pro Thr Lys Gly Thr
                485                 490                 495

att aca gga aac acg gta gtg ttt gat tcg tta cct aga tta ggt tct     1536
Ile Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser
            500                 505                 510

aaa gaa act gta gag ttt tct gta acg ttg aaa gca gta tcc gct gga     1584
Lys Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly
        515                 520                 525

gat gct cgt ggg gaa gct att ctt tct tcc gat aca ttg aca gtt cct     1632
Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro
    530                 535                 540

gta tct gat acg gag aat aca cat atc tat                             1662
Val Ser Asp Thr Glu Asn Thr His Ile Tyr
545                 550
```

<210> 2
<211> 554
<212> PRT
<213> Chlamydia muridium

<400> 2

Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
1 5 10 15

Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
20 25 30

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala
35 40 45

Asp Thr Lys Ala Lys Glu Thr Thr Ser His Gln Lys Asp Arg Lys Ala
50 55 60

Arg Lys Asn His Gln Asn Arg Thr Ser Val Val Arg Lys Glu Val Thr
65 70 75 80

Ala Val Arg Asp Thr Lys Ala Val Glu Pro Arg Gln Asp Ser Cys Phe
85 90 95

Gly Lys Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile
100 105 110

Val Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile
115 120 125

Glu Ile Thr Ala Ile Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr
130 135 140

Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro Ala Thr
145 150 155 160

Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly
165 170 175

Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu
180 185 190

Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg

195 200 205

Ser Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly
210 215 220

Pro Glu Ser Ala Cys Leu Arg Cys Pro Val Thr Tyr Arg Ile Asn Val
225 230 235 240

Val Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro
245 250 255

Val Pro Asp Gly Tyr Ala His Ala Ser Gly Gln Arg Val Leu Thr Tyr
260 265 270

Thr Leu Gly Asp Met Gln Pro Gly Glu Gln Arg Thr Ile Thr Val Glu
275 280 285

Phe Cys Pro Leu Lys Arg Gly Arg Val Thr Asn Ile Ala Thr Val Ser
290 295 300

Tyr Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn
305 310 315 320

Glu Pro Cys Val Gln Val Asn Ile Glu Gly Ala Asp Trp Ser Tyr Val
325 330 335

Cys Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu
340 345 350

Val Leu Arg Asp Val Val Ile Glu Asp Thr Leu Ser Pro Gly Ile Thr
355 360 365

Val Val Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Leu Val Trp
370 375 380

Thr Leu Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu
385 390 395 400

Val Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys
405 410 415

Ser Cys Ser Asp Cys Gly Ile Cys Thr Ser Cys Ala Glu Ala Thr Thr
420 425 430

```
Tyr Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys
        435                 440                 445

Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr
    450                 455                 460

Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu Lys Phe
465                 470                 475                 480

Ser Lys Glu Leu Gln Pro Ile Ser Phe Ser Gly Pro Thr Lys Gly Thr
                485                 490                 495

Ile Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser
            500                 505                 510

Lys Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly
        515                 520                 525

Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro
    530                 535                 540

Val Ser Asp Thr Glu Asn Thr His Ile Tyr
545                 550
```

<210> 3
<211> 1659
<212> DNA
<213> Chlamydia trachomatis

<220>
<221> CDS
<222> (1)..(1659)

<400> 3

```
atg cga ata gga gat cct atg aac aaa ctc atc aga cga gca gtg acg       48
Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
1               5                   10                  15

atc ttc gcg gtg act agt gtg gcg agt tta ttt gct agc ggg gtg tta       96
Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
            20                  25                  30

gag acc tct atg gca gag tct ctc tct aca aac gtt att agc tta gct      144
Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala
        35                  40                  45
```

```
gac acc aaa gcg aaa gac aac act tct cat aaa agc aaa aaa gca aga      192
Asp Thr Lys Ala Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg
    50                  55                  60

aaa aac cac agc aaa gag act ccc gta gac cgt aaa gag gtt gct ccg      240
Lys Asn His Ser Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro
65                  70                  75                  80

gtt cat gag tct aaa gct aca gga cct aaa cag gat tct tgc ttt ggc      288
Val His Glu Ser Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly
                85                  90                  95

aga atg tat aca gtc aaa gtt aat gat gat cgc aat gtt gaa atc aca      336
Arg Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr
            100                 105                 110

caa gct gtt cct gaa tat gct acg gta gga tct ccc tat cct att gaa      384
Gln Ala Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu
        115                 120                 125

att act gct aca ggt aaa agg gat tgt gtt gat gtt atc att act cag      432
Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln
    130                 135                 140

caa tta cca tgt gaa gca gag ttc gta cgc agt gat cca gcg aca act      480
Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr
145                 150                 155                 160

cct act gct gat ggt aag cta gtt tgg aaa att gac cgc tta gga caa      528
Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln
                165                 170                 175

ggc gaa aag agt aaa att act gta tgg gta aaa cct ctt aaa gaa ggt      576
Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
            180                 185                 190

tgc tgc ttt aca gct gca aca gta tgc gct tgt cca gag atc cgt tcg      624
Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser
        195                 200                 205

gtt aca aaa tgt gga caa cct gct atc tgt gtt aaa caa gaa ggc cca      672
Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro
    210                 215                 220

gag aat gct tgt ttg cgt tgc cca gta gtt tac aaa att aat ata gtg      720
Glu Asn Ala Cys Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val
225                 230                 235                 240

aac caa gga aca gca aca gct cgt aac gtt gtt gtt gaa aat cct gtt      768
Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val
                245                 250                 255

cca gat ggt tac gct cat tct tct gga cag cgt gta ctg acg ttt act      816
Pro Asp Gly Tyr Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr
            260                 265                 270

ctt gga gat atg caa cct gga gag cac aga aca att act gta gag ttt      864
```

```
Leu Gly Asp Met Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe
        275                 280                 285

tgt ccg ctt aaa cgt ggt cgt gct acc aat ata gca acg gtt tct tac      912
Cys Pro Leu Lys Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr
    290                 295                 300

tgt gga gga cat aaa aat aca gca agc gta aca act gtg atc aac gag      960
Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu
305                 310                 315                 320

cct tgc gta caa gta agt att gca gga gca gat tgg tct tat gtt tgt     1008
Pro Cys Val Gln Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys
                325                 330                 335

aag cct gta gaa tat gtg atc tcc gtt tcc aat cct gga gat ctt gtg     1056
Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val
            340                 345                 350

ttg cga gat gtc gtc gtt gaa gac act ctt tct ccc gga gtc aca gtt     1104
Leu Arg Asp Val Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val
        355                 360                 365

ctt gaa gct gca gga gct caa att tct tgt aat aaa gta gtt tgg act     1152
Leu Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr
    370                 375                 380

gtg aaa gaa ctg aat cct gga gag tct cta cag tat aaa gtt cta gta     1200
Val Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val
385                 390                 395                 400

aga gca caa act cct gga caa ttc aca aat aat gtt gtt gtg aag agc     1248
Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser
                405                 410                 415

tgc tct gac tgt ggt act tgt act tct tgc gca gaa gcg aca act tac     1296
Cys Ser Asp Cys Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr
            420                 425                 430

tgg aaa gga gtt gct gct act cat atg tgc gta gta gat act tgt gac     1344
Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp
        435                 440                 445

cct gtt tgt gta gga gaa aat act gtt tac cgt att tgt gtc acc aac     1392
Pro Val Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn
    450                 455                 460

aga ggt tct gca gaa gat aca aat gtt tct tta atg ctt aaa ttc tct     1440
Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser
465                 470                 475                 480

aaa gaa ctg caa cct gta tcc ttc tct gga cca act aaa gga acg att     1488
Lys Glu Leu Gln Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile
                485                 490                 495

aca ggc aat aca gta gta ttc gat tcg tta cct aga tta ggt tct aaa     1536
Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys
```

```
            500                 505                 510

gaa act gta gag ttt tct gta aca ttg aaa gca gta tca gct gga gat     1584
Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp
        515                 520                 525

gct cgt ggg gaa gcg att ctt tct tcc gat aca ttg act gtt cca gtt     1632
Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val
    530                 535                 540

tct gat aca gag aat aca cac atc tat                                1659
Ser Asp Thr Glu Asn Thr His Ile Tyr
545                 550
```

<210> 4
<211> 553
<212> PRT
<213> Chlamydia trachomatis

<400> 4

```
Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
1               5                   10                  15

Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
            20                  25                  30

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala
        35                  40                  45

Asp Thr Lys Ala Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg
    50                  55                  60

Lys Asn His Ser Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro
65                  70                  75                  80

Val His Glu Ser Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly
                85                  90                  95

Arg Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr
            100                 105                 110

Gln Ala Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu
        115                 120                 125

Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln
    130                 135                 140
```

```
Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr
145                 150                 155                 160

Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln
                165                 170                 175

Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
            180                 185                 190

Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser
        195                 200                 205

Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro
    210                 215                 220

Glu Asn Ala Cys Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val
225                 230                 235                 240

Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val
                245                 250                 255

Pro Asp Gly Tyr Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr
            260                 265                 270

Leu Gly Asp Met Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe
        275                 280                 285

Cys Pro Leu Lys Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr
    290                 295                 300

Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu
305                 310                 315                 320

Pro Cys Val Gln Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys
                325                 330                 335

Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val
            340                 345                 350

Leu Arg Asp Val Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val
        355                 360                 365
```

```
Leu Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr
    370                 375                 380

Val Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val
385                 390                 395                 400

Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser
                405                 410                 415

Cys Ser Asp Cys Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr
            420                 425                 430

Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp
        435                 440                 445

Pro Val Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn
    450                 455                 460

Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser
465                 470                 475                 480

Lys Glu Leu Gln Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile
                485                 490                 495

Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys
            500                 505                 510

Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp
        515                 520                 525

Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val
    530                 535                 540

Ser Asp Thr Glu Asn Thr His Ile Tyr
545                 550
```

<210> 5
<211> 1554
<212> DNA
<213> CHlamydia muridium

<220>
<221> CDS
<222> (1)..(1554)

<400> 5

```
atg gag tct ctc tct acc aac gtt att agc tta gct gac acc aaa gcg       48
Met Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala Asp Thr Lys Ala
1               5                   10                  15

aaa gag acc act tct cat caa aaa gac aga aaa gca aga aaa aat cat       96
Lys Glu Thr Thr Ser His Gln Lys Asp Arg Lys Ala Arg Lys Asn His
            20                  25                  30

caa aat agg act tcc gta gtc cgt aaa gag gtt act gca gtt cgt gat      144
Gln Asn Arg Thr Ser Val Val Arg Lys Glu Val Thr Ala Val Arg Asp
        35                  40                  45

act aaa gct gta gag cct aga cag gat tct tgc ttt ggc aaa atg tat      192
Thr Lys Ala Val Glu Pro Arg Gln Asp Ser Cys Phe Gly Lys Met Tyr
    50                  55                  60

aca gtc aaa gtt aat gat gat cgt aat gta gaa atc gtg cag tcc gtt      240
Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Val Gln Ser Val
65                  70                  75                  80

cct gaa tat gct acg gta gga tct cca tat cct att gag att act gct      288
Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu Ile Thr Ala
                85                  90                  95

ata ggg aaa aga gac tgt gtt gat gta atc att aca cag caa tta cca      336
Ile Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro
            100                 105                 110

tgc gaa gca gag ttt gtt agc agt gat cca gct act act cct act gct      384
Cys Glu Ala Glu Phe Val Ser Ser Asp Pro Ala Thr Thr Pro Thr Ala
        115                 120                 125

gat ggt aag cta gtt tgg aaa att gat cgg tta gga cag ggc gaa aag      432
Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys
    130                 135                 140

agt aaa att act gta tgg gta aaa cct ctt aaa gaa ggt tgc tgc ttt      480
Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly Cys Cys Phe
145                 150                 155                 160

aca gct gca acg gtt tgt gct tgt cca gag atc cgt tcg gtt acg aaa      528
Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser Val Thr Lys
                165                 170                 175

tgt ggc cag cct gct atc tgt gtt aaa cag gaa ggt cca gaa agc gca      576
Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro Glu Ser Ala
            180                 185                 190

tgt ttg cgt tgc cca gta act tat aga att aat gta gtc aac caa gga      624
Cys Leu Arg Cys Pro Val Thr Tyr Arg Ile Asn Val Val Asn Gln Gly
        195                 200                 205

aca gca aca gca cgt aat gtt gtt gtg gaa aat cct gtt cca gat ggc      672
Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val Pro Asp Gly
    210                 215                 220
```

```
tat gct cat gca tcc gga cag cgt gta ttg aca tat act ctt ggg gat      720
Tyr Ala His Ala Ser Gly Gln Arg Val Leu Thr Tyr Thr Leu Gly Asp
225                 230                 235                 240

atg caa cct gga gaa cag aga aca atc acc gtg gag ttt tgt ccg ctt      768
Met Gln Pro Gly Glu Gln Arg Thr Ile Thr Val Glu Phe Cys Pro Leu
                245                 250                 255

aaa cgt ggt cga gtc aca aat att gct aca gtt tct tac tgt ggt gga      816
Lys Arg Gly Arg Val Thr Asn Ile Ala Thr Val Ser Tyr Cys Gly Gly
            260                 265                 270

cac aaa aat act gct agc gta aca aca gtg atc aat gag cct tgc gtg      864
His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu Pro Cys Val
        275                 280                 285

caa gtt aac atc gag gga gca gat tgg tct tat gtt tgt aag cct gta      912
Gln Val Asn Ile Glu Gly Ala Asp Trp Ser Tyr Val Cys Lys Pro Val
    290                 295                 300

gaa tat gtt atc tct gtt tct aac cct ggt gac tta gtt tta cga gac      960
Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val Leu Arg Asp
305                 310                 315                 320

gtt gta att gaa gat acg ctt tct cct gga ata act gtt gtt gaa gca     1008
Val Val Ile Glu Asp Thr Leu Ser Pro Gly Ile Thr Val Val Glu Ala
                325                 330                 335

gct gga gct cag att tct tgt aat aaa ttg gtt tgg act ttg aag gaa     1056
Ala Gly Ala Gln Ile Ser Cys Asn Lys Leu Val Trp Thr Leu Lys Glu
            340                 345                 350

ctc aat cct gga gag tct tta caa tat aag gtt cta gta aga gct caa     1104
Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val Arg Ala Gln
        355                 360                 365

act cca ggg caa ttc aca aac aac gtt gtt gtg aaa agt tgc tct gat     1152
Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser Cys Ser Asp
    370                 375                 380

tgc ggt att tgt act tct tgc gca gaa gca aca act tac tgg aaa gga     1200
Cys Gly Ile Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr Trp Lys Gly
385                 390                 395                 400

gtt gct gct act cat atg tgc gta gta gat act tgt gat cct att tgc     1248
Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp Pro Ile Cys
                405                 410                 415

gta gga gag aac act gtt tat cgt atc tgt gtg aca aac aga ggt tct     1296
Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn Arg Gly Ser
            420                 425                 430

gct gaa gat aca aat gtg tcc tta att ttg aaa ttc tct aaa gaa tta     1344
Ala Glu Asp Thr Asn Val Ser Leu Ile Leu Lys Phe Ser Lys Glu Leu
        435                 440                 445
```

```
caa cct ata tct ttc tct gga cca act aaa gga acc att aca gga aac     1392
Gln Pro Ile Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile Thr Gly Asn
    450                 455                 460

acg gta gtg ttt gat tcg tta cct aga tta ggt tct aaa gaa act gta     1440
Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys Glu Thr Val
465                 470                 475                 480

gag ttt tct gta acg ttg aaa gca gta tcc gct gga gat gct cgt ggg     1488
Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp Ala Arg Gly
                485                 490                 495

gaa gct att ctt tct tcc gat aca ttg aca gtt cct gta tct gat acg     1536
Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val Ser Asp Thr
            500                 505                 510

gag aat aca cat atc tat                                            1554
Glu Asn Thr His Ile Tyr
        515
```

<210> 6
<211> 518
<212> PRT
<213> CHlamydia muridium

<400> 6

```
Met Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala Asp Thr Lys Ala
1               5                   10                  15

Lys Glu Thr Thr Ser His Gln Lys Asp Arg Lys Ala Arg Lys Asn His
            20                  25                  30

Gln Asn Arg Thr Ser Val Val Arg Lys Glu Val Thr Ala Val Arg Asp
        35                  40                  45

Thr Lys Ala Val Glu Pro Arg Gln Asp Ser Cys Phe Gly Lys Met Tyr
    50                  55                  60

Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Val Gln Ser Val
65                  70                  75                  80

Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu Ile Thr Ala
                85                  90                  95

Ile Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro
            100                 105                 110

Cys Glu Ala Glu Phe Val Ser Ser Asp Pro Ala Thr Thr Pro Thr Ala
```

```
      115                 120                 125

Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys
    130                 135                 140

Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly Cys Cys Phe
145                 150                 155                 160

Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser Val Thr Lys
                165                 170                 175

Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro Glu Ser Ala
            180                 185                 190

Cys Leu Arg Cys Pro Val Thr Tyr Arg Ile Asn Val Val Asn Gln Gly
        195                 200                 205

Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val Pro Asp Gly
    210                 215                 220

Tyr Ala His Ala Ser Gly Gln Arg Val Leu Thr Tyr Thr Leu Gly Asp
225                 230                 235                 240

Met Gln Pro Gly Glu Gln Arg Thr Ile Thr Val Glu Phe Cys Pro Leu
                245                 250                 255

Lys Arg Gly Arg Val Thr Asn Ile Ala Thr Val Ser Tyr Cys Gly Gly
            260                 265                 270

His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu Pro Cys Val
        275                 280                 285

Gln Val Asn Ile Glu Gly Ala Asp Trp Ser Tyr Val Cys Lys Pro Val
    290                 295                 300

Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val Leu Arg Asp
305                 310                 315                 320

Val Val Ile Glu Asp Thr Leu Ser Pro Gly Ile Thr Val Val Glu Ala
                325                 330                 335

Ala Gly Ala Gln Ile Ser Cys Asn Lys Leu Val Trp Thr Leu Lys Glu
            340                 345                 350
```

```
Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val Arg Ala Gln
        355                 360                 365

Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser Cys Ser Asp
    370                 375                 380

Cys Gly Ile Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr Trp Lys Gly
385                 390                 395                 400

Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp Pro Ile Cys
                405                 410                 415

Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn Arg Gly Ser
            420                 425                 430

Ala Glu Asp Thr Asn Val Ser Leu Ile Leu Lys Phe Ser Lys Glu Leu
        435                 440                 445

Gln Pro Ile Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile Thr Gly Asn
    450                 455                 460

Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys Glu Thr Val
465                 470                 475                 480

Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp Ala Arg Gly
                485                 490                 495

Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val Ser Asp Thr
            500                 505                 510

Glu Asn Thr His Ile Tyr
        515
```

<210> 7
<211> 1551
<212> DNA
<213> Chlamydia trachomatis

<220>
<221> CDS
<222> (1)..(1551)

<400> 7

```
atg gag tct ctc tct aca aac gtt att agc tta gct gac acc aaa gcg       48
Met Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala Asp Thr Lys Ala
1               5                  10                  15

aaa gac aac act tct cat aaa agc aaa aaa gca aga aaa aac cac agc       96
Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg Lys Asn His Ser
            20                  25                  30

aaa gag act ccc gta gac cgt aaa gag gtt gct ccg gtt cat gag tct      144
Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro Val His Glu Ser
        35                  40                  45

aaa gct aca gga cct aaa cag gat tct tgc ttt ggc aga atg tat aca      192
Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly Arg Met Tyr Thr
    50                  55                  60

gtc aaa gtt aat gat gat cgc aat gtt gaa atc aca caa gct gtt cct      240
Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr Gln Ala Val Pro
65                  70                  75                  80

gaa tat gct acg gta gga tct ccc tat cct att gaa att act gct aca      288
Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu Ile Thr Ala Thr
                85                  90                  95

ggt aaa agg gat tgt gtt gat gtt atc att act cag caa tta cca tgt      336
Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys
            100                 105                 110

gaa gca gag ttc gta cgc agt gat cca gcg aca act cct act gct gat      384
Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp
        115                 120                 125

ggt aag cta gtt tgg aaa att gac cgc tta gga caa ggc gaa aag agt      432
Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser
    130                 135                 140

aaa att act gta tgg gta aaa cct ctt aaa gaa ggt tgc tgc ttt aca      480
Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly Cys Cys Phe Thr
145                 150                 155                 160

gct gca aca gta tgc gct tgt cca gag atc cgt tcg gtt aca aaa tgt      528
Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser Val Thr Lys Cys
                165                 170                 175

gga caa cct gct atc tgt gtt aaa caa gaa ggc cca gag aat gct tgt      576
Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro Glu Asn Ala Cys
            180                 185                 190

ttg cgt tgc cca gta gtt tac aaa att aat ata gtg aac caa gga aca      624
Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val Asn Gln Gly Thr
        195                 200                 205

gca aca gct cgt aac gtt gtt gtt gaa aat cct gtt cca gat ggt tac      672
Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val Pro Asp Gly Tyr
    210                 215                 220

gct cat tct tct gga cag cgt gta ctg acg ttt act ctt gga gat atg      720
```

```
Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr Leu Gly Asp Met
225                 230                 235                 240

caa cct gga gag cac aga aca att act gta gag ttt tgt ccg ctt aaa     768
Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe Cys Pro Leu Lys
                245                 250                 255

cgt ggt cgt gct acc aat ata gca acg gtt tct tac tgt gga gga cat     816
Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr Cys Gly Gly His
            260                 265                 270

aaa aat aca gca agc gta aca act gtg atc aac gag cct tgc gta caa     864
Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu Pro Cys Val Gln
        275                 280                 285

gta agt att gca gga gca gat tgg tct tat gtt tgt aag cct gta gaa     912
Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys Lys Pro Val Glu
    290                 295                 300

tat gtg atc tcc gtt tcc aat cct gga gat ctt gtg ttg cga gat gtc     960
Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val Leu Arg Asp Val
305                 310                 315                 320

gtc gtt gaa gac act ctt tct ccc gga gtc aca gtt ctt gaa gct gca    1008
Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val Leu Glu Ala Ala
                325                 330                 335

gga gct caa att tct tgt aat aaa gta gtt tgg act gtg aaa gaa ctg    1056
Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr Val Lys Glu Leu
            340                 345                 350

aat cct gga gag tct cta cag tat aaa gtt cta gta aga gca caa act    1104
Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val Arg Ala Gln Thr
        355                 360                 365

cct gga caa ttc aca aat aat gtt gtt gtg aag agc tgc tct gac tgt    1152
Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser Cys Ser Asp Cys
    370                 375                 380

ggt act tgt act tct tgc gca gaa gcg aca act tac tgg aaa gga gtt    1200
Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr Trp Lys Gly Val
385                 390                 395                 400

gct gct act cat atg tgc gta gta gat act tgt gac cct gtt tgt gta    1248
Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp Pro Val Cys Val
                405                 410                 415

gga gaa aat act gtt tac cgt att tgt gtc acc aac aga ggt tct gca    1296
Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn Arg Gly Ser Ala
            420                 425                 430

gaa gat aca aat gtt tct tta atg ctt aaa ttc tct aaa gaa ctg caa    1344
Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser Lys Glu Leu Gln
        435                 440                 445

cct gta tcc ttc tct gga cca act aaa gga acg att aca ggc aat aca    1392
Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile Thr Gly Asn Thr
```

```
    450                 455                 460

gta gta ttc gat tcg tta cct aga tta ggt tct aaa gaa act gta gag     1440
Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys Glu Thr Val Glu
465                 470                 475                 480

ttt tct gta aca ttg aaa gca gta tca gct gga gat gct cgt ggg gaa     1488
Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp Ala Arg Gly Glu
                485                 490                 495

gcg att ctt tct tcc gat aca ttg act gtt cca gtt tct gat aca gag     1536
Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val Ser Asp Thr Glu
            500                 505                 510

aat aca cac atc tat                                                1551
Asn Thr His Ile Tyr
        515
```

<210> 8
<211> 517
<212> PRT
<213> Chlamydia trachomatis

<400> 8

```
Met Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala Asp Thr Lys Ala
1               5                   10                  15

Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg Lys Asn His Ser
            20                  25                  30

Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro Val His Glu Ser
        35                  40                  45

Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly Arg Met Tyr Thr
    50                  55                  60

Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr Gln Ala Val Pro
65                  70                  75                  80

Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu Ile Thr Ala Thr
                85                  90                  95

Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys
            100                 105                 110

Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp
        115                 120                 125
```

```
Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser
    130                 135                 140

Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly Cys Cys Phe Thr
145                 150                 155                 160

Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser Val Thr Lys Cys
                165                 170                 175

Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro Glu Asn Ala Cys
            180                 185                 190

Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val Asn Gln Gly Thr
        195                 200                 205

Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val Pro Asp Gly Tyr
    210                 215                 220

Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr Leu Gly Asp Met
225                 230                 235                 240

Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe Cys Pro Leu Lys
                245                 250                 255

Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr Cys Gly Gly His
            260                 265                 270

Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu Pro Cys Val Gln
        275                 280                 285

Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys Lys Pro Val Glu
    290                 295                 300

Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val Leu Arg Asp Val
305                 310                 315                 320

Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val Leu Glu Ala Ala
                325                 330                 335

Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr Val Lys Glu Leu
            340                 345                 350
```

```
Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val Arg Ala Gln Thr
        355                 360                 365

Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser Cys Ser Asp Cys
    370                 375                 380

Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr Trp Lys Gly Val
385                 390                 395                 400

Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp Pro Val Cys Val
                405                 410                 415

Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn Arg Gly Ser Ala
            420                 425                 430

Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser Lys Glu Leu Gln
        435                 440                 445

Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile Thr Gly Asn Thr
    450                 455                 460

Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys Glu Thr Val Glu
465                 470                 475                 480

Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp Ala Arg Gly Glu
                485                 490                 495

Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val Ser Asp Thr Glu
            500                 505                 510

Asn Thr His Ile Tyr
        515
```

<210> 9
<211> 37
<212> DNA
<213> Chlamydia muridium

<400> 9
ataagaatgc ggccgcatgc gaataggaga tcctatg 37

<210> 10
<211> 37
<212> DNA
<213> Chlamydia muridium

<400> 10
cgacccaagc ttcatagata tgtgtattct ccgtatc 37

<210> 11
<211> 40
<212> DNA
<213> Chlamydia muridium

<400> 11
ataagaatgc ggccgcatgg agtctctctc taccaacgtt 40

<210> 12
<211> 37
<212> DNA
<213> Chlamydia muridium

<400> 12
cgacccaagc ttcatagata tgtgtattct ccgtatc 37

<210> 13
<211> 31
<212> DNA
<213> Chlamydia muridium

<400> 13
gaattcggat ccgatgaaca aactcatcag a 31

<210> 14
<211> 36
<212> DNA
<213> Chlamydia muridium

<400> 14
attaagaatg cggccgcttc attaatagat atgtgt 36